Photo by Cole, USDA

Balancing Conservation Costs and Benefits

The growing role of natural resource conservation in U.S. farm policy is evident in the fivefold increase in funding for the Environmental Quality Incentives Program (EQIP) in the 2002 Farm Act. EQIP provides technical, financial, and educational assistance to farmers and ranchers implementing a wide range of agri-environmental practices on land used for farming. Recognizing the dearth of data concerning the installation of conservation practices on U.S. farms, ERS constructed a database using EQIP conservation practice data. The database offers a unique opportunity to better understand the demand for conservation practices across regions, the conservation practices being funded and implemented, and the unit costs (dollars per acre, dollars per foot, etc.) of implementing these practices.

The types of conservation practices that farmers use fall into two broad categories, each of which covers a wide range of practices. Structural practices, as their name suggests, are conservation activities that involve the installation of some sort of equipment or structure, such as a pond to provide water for livestock. Management practices are conservation methods or techniques that help farmers with the operational aspects of their work. Some examples are tillage techniques, integrated pest management, and conservation crop rotation.

The data reveal the range of costs farmers incur in implementing conservation practices. On average, structural practices tend to have higher fixed costs than management practices because they typically require the use of heavy machinery. For many practices, producers realize economies of scale (lower unit costs) on larger conservation projects or installations. Not surprisingly, structural practices, because they have higher fixed costs, tend to show greater economies of scale. A comparison of small- and large-size installations shows that the average unit cost reduction for structural practices (from small to large installations) ranged from 14 percent to 70 percent, while for management practices, the range was 19 percent to 35 percent.

Now, with the creation of this database, researchers and policy analysts can examine the costs of conservation programs and policies in a comprehensive manner and identify opportunities to reduce costs. Policymakers can use such analyses to evaluate program performance. Combined with information on the farm structure of the rural economy, these data could also be used to target conservation programs more effectively. Given the growing but still limited budget for conservation, the database can help conservation program managers attain environmental goals while attending to farmers' specific conservation needs and minimizing costs.

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For more information on Environmental Quality Incentives Program data, visit: www.ers.usda.gov/data/eqip

What You Want To Know About Resources and the Environment . . . But Couldn't Find

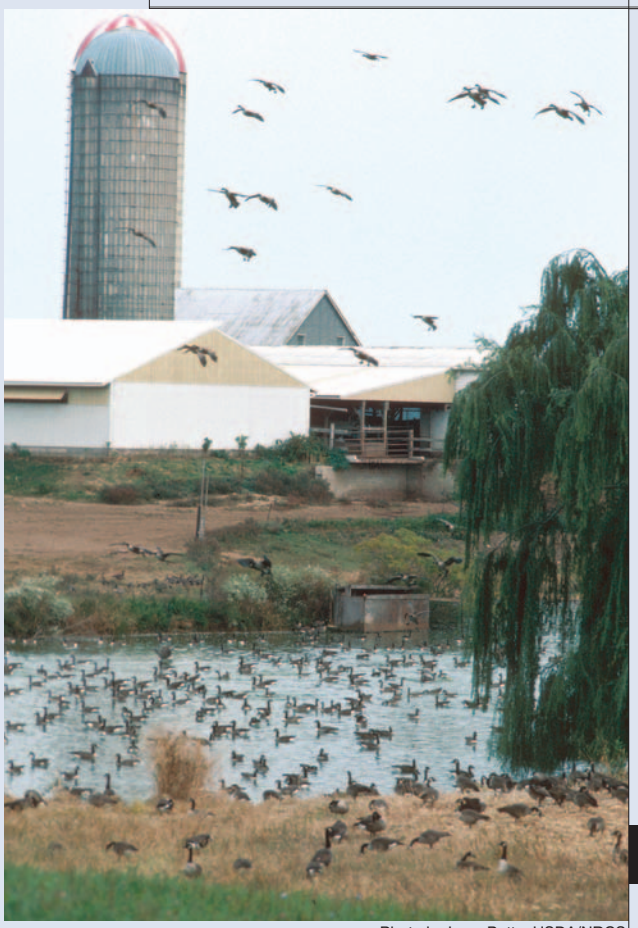


Photo by Lynn Betts, USDA/NRCS

Agriculture has always depended on soil, water, air, and other natural resources and has always had a profound impact on the environment. Despite the increased focus on environmental issues during the last half of the 20th century, it wasn't always easy to find basic facts about resource use in agriculture and environmental impacts associated with agricultural production. Nearly 10 years ago, ERS addressed that problem with the release of *Agricultural Resources and Environmental Indicators,* known as *AREI.* The third and latest edition of the report, available as an online document only, continues to expand on the information contained in the original and is updated as new data become available. Coverage includes land, water, and a variety of other resources, practices, and policies.

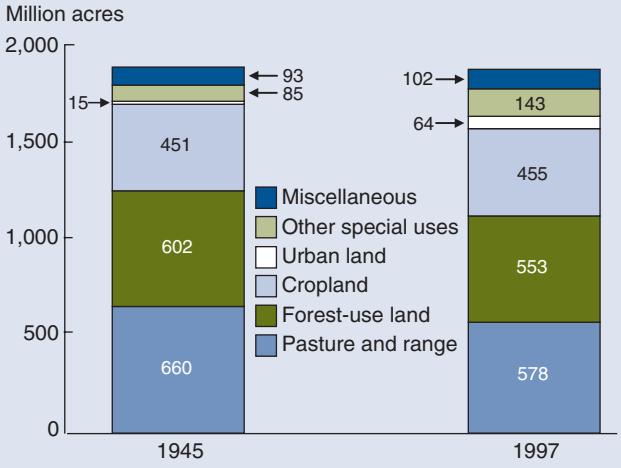
Land resources—Grassland pasture and range, followed by forest, each account for over 25 percent of U.S. land use, while cropland comes in third with 20 percent. While urbanized land has quadrupled since 1945, it still makes up less than 3.5 percent of the U.S. land base and is not an overall threat to food production. Besides food, rural land provides many other amenities (such as open space, scenic views, wildlife habitat, and recreation) that are driving farmland preservation efforts. While land quality can be degraded by soil erosion, conservation efforts have substantially reduced the problem on agricultural lands.

Water resources—Irrigation of crops is the dominant use of fresh water in the U.S., but agriculture's share is dropping as urban and environmental demands for water increase. While only about 15 percent of U.S. harvested cropland is irrigated, this portion provides about 40 percent of the total value of crops produced. Water runoff from agricultural lands often carries sediment and nutrients and other chemicals into water bodies and groundwater. Various Federal and State programs are directed toward water conservation and quality preservation.

Biological resources—Some biological resources affect agriculture (such as cultivated plants and pollinators), some provide scientific input (such as genetic resources for plant breeding and biotechnology), and some are natural goods and services (such as wildlife, fish, and scenic beauty). While often difficult to value, these resources make an increasingly recognized contribution to society, and are the focus of national and international efforts to preserve and enhance that contribution.

AREI also has chapters on soil, nutrient, and pest management; agricultural productivity and research; domestic conservation and environmental polices; and U.S. agriculture and global resources.

Major uses of land in the contiguous 48 States



Source: Figure 1.1.1 and Table 1.1.2 of AREI 2001 at www.ers.usda.gov/publications/arei/arei2001/arei1_1landuse.pdf

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For more information on ERS's *Agricultural Resources and Environmental Indicators*, visit: www.ers.usda.gov/publications/arei/arei2001